

2010 ANNUAL FIRE WEATHER REPORT
NATIONAL WEATHER SERVICE FORECAST OFFICE
FLAGSTAFF ARIZONA



(Schultz Fire in June & Subsequent Flash Flooding in July of 2010)

10 January 2011

MEMORANDUM FOR: W/WR1x3 – Roger Lamoni

FROM: Robert Bohlin/ FGZ FWX Program Manager

THROUGH: Brian Klimowski/ FGZ MIC

SUBJECT: Annual Fire Weather Report for 2010

1. OVERVIEW

The year of 2010 was a historic weather year here in Flagstaff Arizona, with 5 feet of record snowfall in January, followed by frequent spring dust storms, the Schultz wildfire in June, flash flooding of the Schultz burn area in July & August, and finally a record breaking tornado outbreak on October 6th.

The Schultz Fire became largest wildfire in the 2010 Arizona fire season. This wildfire started from an abandoned camp fire on June 20th along the steep slopes of the San Francisco Peaks just a few miles northeast of Flagstaff. The Schultz Fire grew quickly and eventually consumed 15,075 acres of ponderosa pine forest before full containment on June 30th. Our IMET Mark Stubblefield was dispatched to the Schultz Fire on June 21st, spending 11 days on-site. The focus quickly shifted from wildfire suppression support to preparation and community outreach for flash flooding. Several communities down slope from the burn area were under an imminent flash flooding threat in the next week or two, as heavy monsoon rains typically start in early July, and flash flooding was a near certainty. Numerous community meetings were held with the local officials and our office staff members: Brian Klimowski (MIC) and George Howard (WCM).

A case study review on the impacts from the Schultz Wildfire was conducted by the Arizona Geological Survey http://www.azgs.az.gov/arizona_geology/winter10/article_feature.html

Fire Weather Forecast Product Summary:

| | | |
|------------------------------|------------|--------------|
| Spot Forecasts: | 553 | <i>(895)</i> |
| Fire Weather Watches: | 153 | <i>(157)</i> |
| Red Flag Warnings: | 164 | <i>(181)</i> |

(Totals for 2009)

In November, our office hosted a forecast area (CWA) wide fire weather meeting near our office on Camp Navajo. The goals for this meeting were to review web access of our products and services, discuss future fire weather forecasting needs and to present a local area case study on La Nina with possible impacts for the upcoming winter and spring fire seasons. Attendees included FMO's from the US Forest Service, Bureau of Indian Affairs and the National Park Service.

2. QUARTERLY WEATHER SUMMARY

JAN-MAR: A series of snow storms pummeled northern Arizona over a one week period starting January 18th. By Friday January 22nd, 3 to 5 feet of new snow had fallen across our higher elevation areas. By the end of January Flagstaff reported 5.60 inches of precipitation (rain & melted snow); more than double the monthly normal amount of 2.18 inches. While January roared in like a lion on precipitation, the February and March period was on the drier side with Flagstaff reporting in around 2 inches below normal precipitation over the last two months of the quarter.

APR-JUN: Extremely dry conditions developed during the spring with periods of strong winds and unusual dust storm activity in the Little Colorado River Valley causing repeated shutdowns of interstate 40 between Flagstaff and Winslow. The bulk of our Fire Weather Watches and Red Flag Warnings were issued during the spring quarter.

JUL-SEP: The summer monsoon season precipitation started up on the second week of July. Rainfall amounts around Flagstaff totaled 5.94 inches more than double the monthly normal value of 2.40 inches. August rainfall totals continued to be above normal before drying out in September. Overall a fairly wet summer monsoon season made up for the spring dry spell.

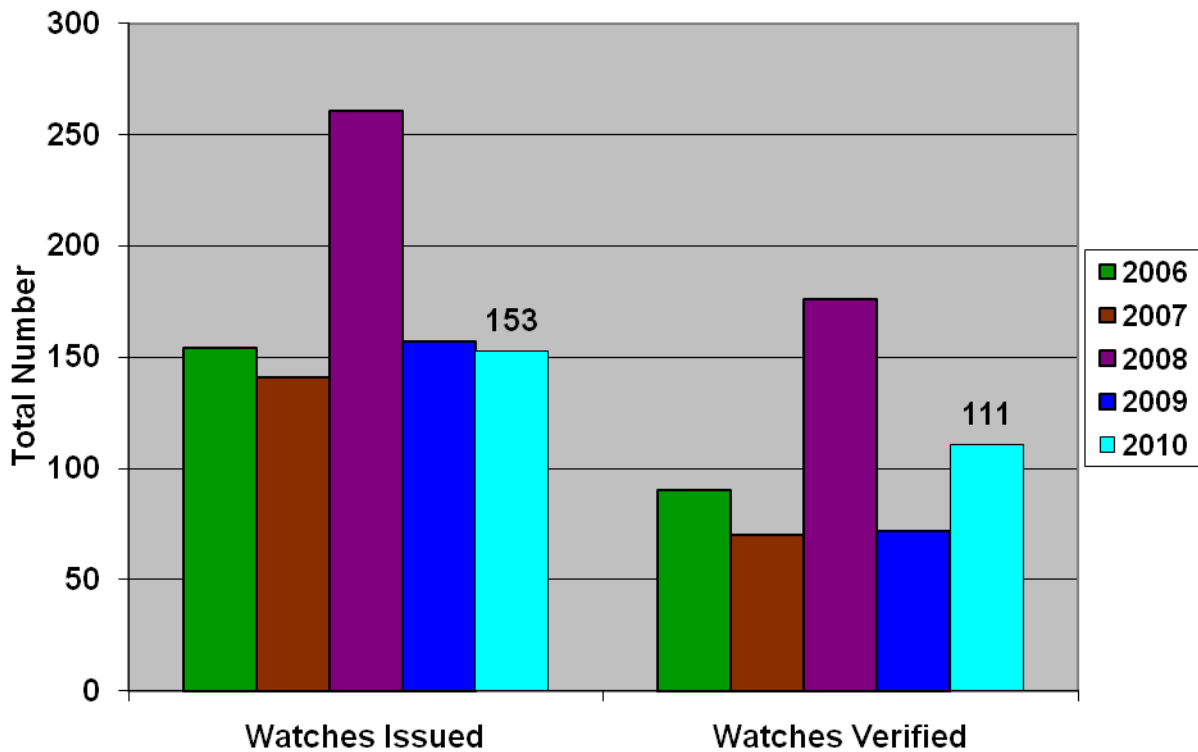
OCT-DEC: October kicked off another wild weather pattern for northern Arizona with a record setting tornado outbreak on October 6th with two tornadoes passing within ½ mile of our forecast office. 22 tornado warnings were issued over a twelve hour period from 2 am to 2 pm MST. 8 tornadoes have since been confirmed by damage assessment teams ranging in intensity from EF-0 to EF-3 (EF= Enhanced Fujita scale). High precipitation amounts also returned in October with Flagstaff reporting a full inch above our monthly normal. Near normal precipitation was reported for the month of November. Several storms in December produced 3.40 inches of rain and melted snowfall which is double the monthly normal precipitation total for Flagstaff.

3. FIRE WEATHER WATCH AND RED FLAG WARNING VERIFICATION

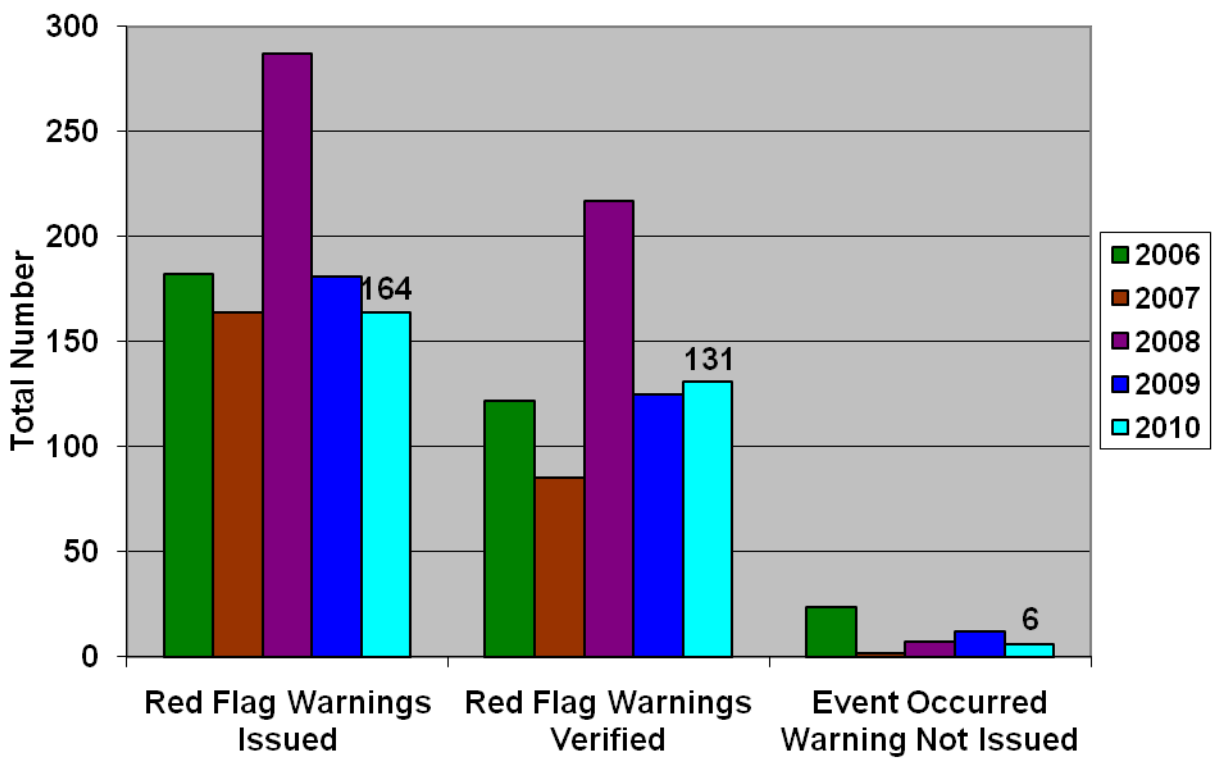
Watch and Warning Statistics for the 2010 Fire Season:

Our Red Flag verification scores all meet or exceed western regional goals for 2010. Comparing 2010 to 2009 verification numbers, we raised our lead time on Red Flag Warnings (RFW's) by over 7 hours and issued more watches relative to the number of warnings that were issued. 93% of our RFW's were issued during the spring quarter, this was primarily caused by an unusually wet summer, fall and winter. Our spot forecast numbers have fallen significantly when compared to 2009, however, our opportunities for more spot forecasts were likely limited by above normal precipitation in 2010 (compared to one of the driest monsoon season on record in 2009) and fire management assets prioritized to support the 15,000 acre Shultz Wildfire in late June & early July. Overall I am pleased with our fire weather program statistics this year and believe we can work to increase our fire weather watch issuance to provide fire managers more lead time on upcoming critical fire weather events.

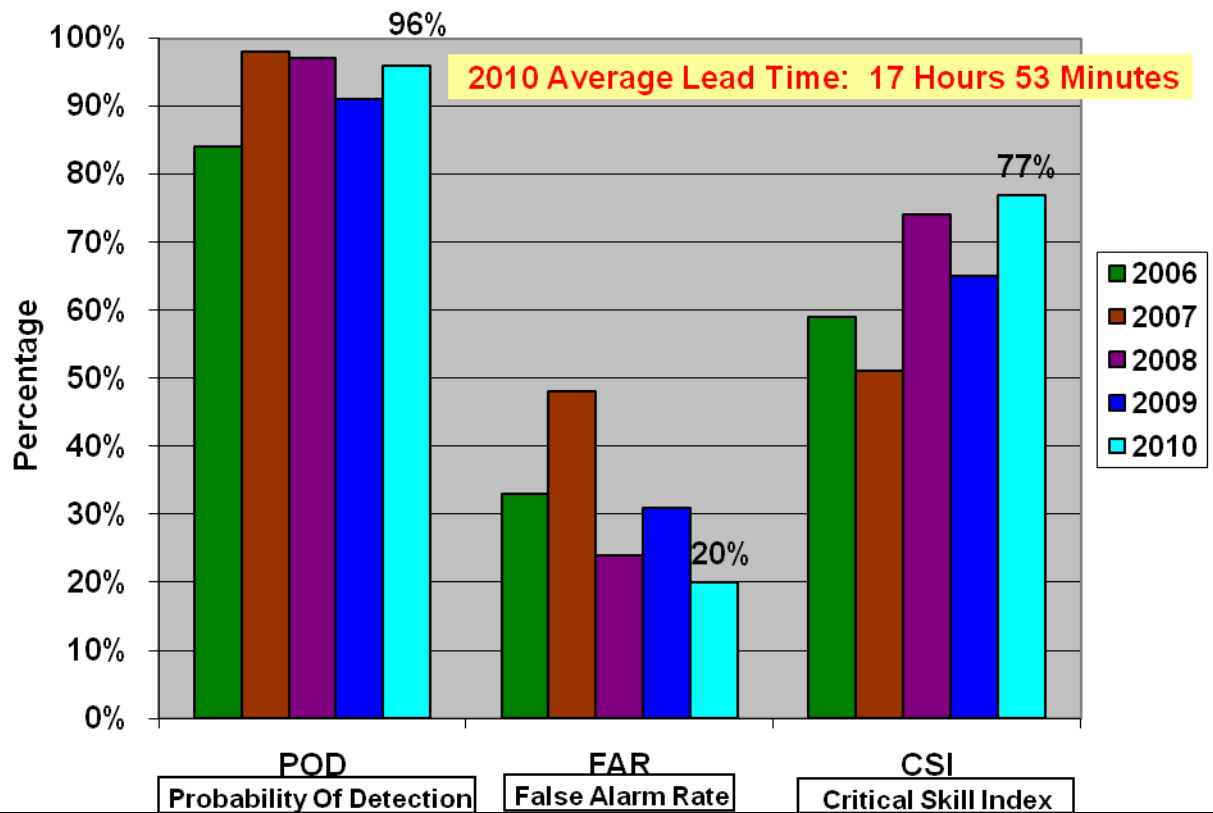
Fire Weather Watches



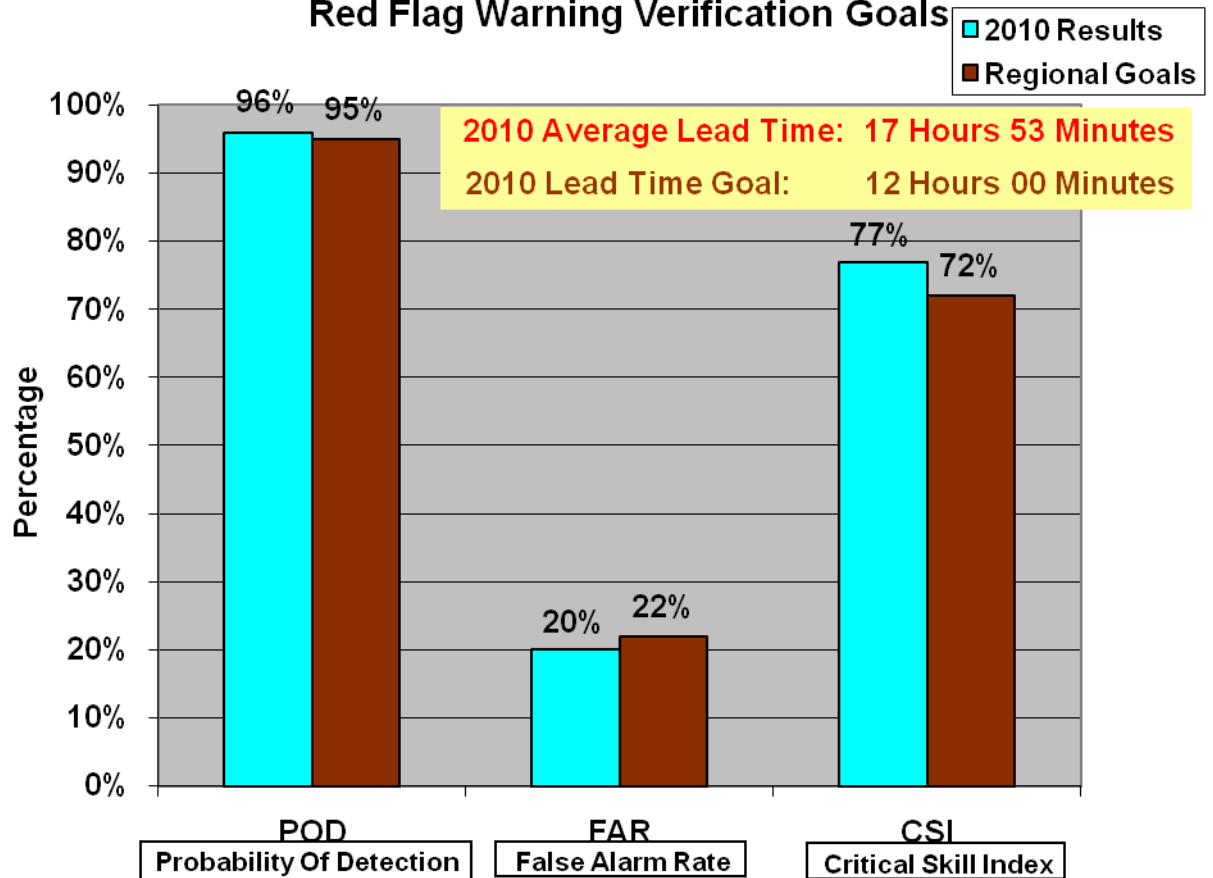
Red Flag Warnings



Red Flag Warning Verification



Red Flag Warning Verification Goals



4. SPOT FORECAST SUMMARY

| | |
|----------------------------|------------|
| Wildfire forecasts: | 187 |
| Prescribed Burn forecasts: | 360 |
| Search & Rescue forecasts: | 6 |
| Total: | 553 |

5. INCIDENT METEOROLOGIST DISPATCHES FOR 2010

Our IMET, Mark Stubblefield, provided on site support to two fires:

| | | |
|---------------------------------------|------------------|---------|
| Boggy Fire, AZ (Apache Sitgreaves NF) | June 12-15 | 4 days |
| Schultz Fire, AZ (Coconino NF) | June 21 – July 1 | 11 days |

Number of IMET Dispatches: 2
Number of IMET Dispatch days: 15

6. FIRE WEATHER TRAINING ASSIGNMENTS

| <u>Course</u> | <u>Date</u> | <u>Agency</u> |
|---------------|-------------|-------------------------------|
| S-290 | 2/16-17 | Prescott National Forest |
| S-290 | 3/13-14 | Arizona Wildland Fire Academy |
| S-290 | 3/16-17 | Arizona Wildland Fire Academy |
| S-290 | 3/29-30 | Coconino National Forest |
| S-390 | 10/4 | Coronado National Forest |

7. FIRE WEATHER OUTREACH MEETING SUMMARY

- Ponderosa Fire Advisory Council seasonal briefings
- Flagstaff Hotshots annual training
- Coconino and Kaibab National Forest fire lookouts weather orientation
- Pre Fire Season Media Workshop in conjunction with Coconino and Kaibab National Forests
- Post Schultz Fire: 4 large public meetings (200+ attendees each) hosted by Coconino County Emergency Management
- Post Schultz Fire: 6 community meetings (30+ attendees each)
- Hosted a CWA wide FMO meeting with northern Arizona reps from BIA/USFS/NPS attending